



# Influenza Historic Timeline

Below is a historical timeline of major scientific and public health events and milestones in influenza prevention.

## 1930s

- Influenza viruses are isolated from people, proving that influenza is caused by a virus not a bacterium.
  - [Smith, Andrewes, and Laidlaw isolate influenza A virus in ferrets in 1933](#)
  - [Francis isolates influenza B virus in 1936](#)
  - [In 1936, Burnet discovers that influenza virus can be grown in embryonated hens' eggs.](#)

## 1940s

- 1940s: Thomas Francis, Jr., MD and Jonas Salk, MD serve as lead researchers at the University of Michigan to develop the first inactivated flu vaccine with support from the U.S. Army. Their vaccine uses fertilized chicken eggs in a method that is still used to produce most flu vaccines today. The Army is involved with this research because of their experience with troop loss from flu illness and deaths during WWI. This original vaccine only includes an inactivated influenza A virus.
- 1940s: First-generation mechanical ventilators become available. These machines support breathing in patients suffering respiratory complications.
- 1940: Influenza B viruses are discovered.
- 1942: A bivalent (two component) vaccine that offers protection against influenza A and influenza B viruses is produced after the discovery of influenza B viruses.
- 1944: Use of cell cultures for virus growth is discovered. This allows viruses to be cultured outside the body for the first time. The ability to culture influenza from respiratory secretions allows diagnosis of influenza.
- 1945: Inactivated influenza vaccine is licensed for use in civilians.
- 1942: The Communicable Disease Center (CDC) opens in the old offices of the Malaria Control in War Areas, located on Peachtree Street in Atlanta, Georgia with a satellite campus in Chamblee. Launched with fewer than 400 employees, the organization—today the Centers for Disease Control and Prevention—moves to its current main campus on Clifton Road in Atlanta in 1947 after paying \$10 to Emory University for 15 acres of land.
- 1947: During the seasonal flu epidemic of 1947, investigators determine that changes in the antigenic composition of circulating influenza viruses has rendered existing vaccines ineffective, highlighting the need for continuous surveillance and characterization of circulating flu viruses.
- 1948: The World Health Organization (WHO) Influenza Centre is established at the National Institute for Medical Research in London. The primary tasks of the organization are to collect and characterize influenza viruses, develop methods for the laboratory diagnosis of influenza virus infections, establish a network of laboratories, and disseminate data accumulated from their investigations.

### 1950s

- 1952: The Global Influenza Surveillance and Response System (GISRS) is created by WHO to monitor the evolution of influenza viruses. The GISRS network originally includes 26 laboratories.
- 1956: The CDC's Influenza Branch in Atlanta is designated a WHO Collaborating Centre for Surveillance, Epidemiology & Control of Influenza.
- 1957: A new [H2N2 flu virus emerges](#) to trigger a pandemic. There are about 1.1 million deaths globally, with about 116,000 in the U.S.

### 1960s

- 1960: In 1960, the US Surgeon General, in response to substantial morbidity and mortality during the 1957–58 pandemic, recommends annual influenza vaccination for people with chronic debilitating disease, people aged 65 years or older, and pregnant women.
- 1961: An outbreak in South Africa raises possibility of wild birds as a possible reservoir for influenza A viruses.
- 1962: CDC launches the 122 Cities Mortality Reporting System. Each week, the vital statistics office of 122 cities across the U.S. report the total number of death certificates processed and the number of those for which pneumonia or influenza is listed as an underlying or contributing cause of death by age group. The system is retired in October 2016.
- 1966: The FDA licenses amantadine, a new antiviral medication, as a prophylactic (preventive medicine) against influenza A. It isn't effective against influenza B.
- 1967: Dr. H.G. Pereira and colleagues propose a relationship between human and avian flu viruses after a study shows an antigenic relationship between the 1957 human pandemic A virus and an influenza A virus isolated from a turkey. The study raises the question and triggers the body of work on whether human influenza viruses are of avian origin.
- 1968: A new H3N2 influenza virus emerges to trigger another pandemic, resulting in roughly 100,000 deaths in the U.S. and 1 million worldwide. Most of those deaths are in people 65 and older. H3N2 viruses circulating today are descendants of the H3N2 virus that emerges in 1968.

### 1970s

- An H1N1 (swine flu) outbreak among recruits at Fort Dix leads to a vaccination program to prevent a pandemic. Within 10 months, roughly 25% of the US population is vaccinated (48 million people), about twice the level needed to provide coverage for the at-risk population. Cases of Guillain-Barre syndrome, a neurologic condition that in rare instances has been associated with vaccination, among vaccine recipients appeared to be in excess of what was expected, so officials determine the vaccination program should be halted. 1981: CDC begins collecting reports of influenza outbreaks from state and territorial epidemiologists.



## 1990s

- 1993: The Vaccines for Children (VFC) Program is established as a result of a measles outbreak to provide vaccines at no cost to children whose parents or guardians might not be able to afford them. The program increases the likelihood of children getting recommended vaccinations on schedule.
- 1993: The costs of influenza vaccine become a covered benefit under Medicare Part B.
- 1994: Rimantadine, derived from amantadine, is approved by the FDA to treat influenza A.
- 1996: An avian influenza H5N1 virus is first isolated from a farmed goose in China.
- 1997: The first human infection with an avian influenza A H5N1 virus is identified in Hong Kong.
- 1997: FluNet, a web-based flu surveillance tool, is launched by WHO. It is a critical tool for tracking the movement of flu viruses globally. Country data is updated weekly and is publically available.
- 1998: Influenza virus surveillance in swine, conducted by the US Department of Agriculture, begins in the United States. A virus that is a hybrid of human, bird and swine flu viruses is detected in pigs. This virus becomes the dominant flu virus in U.S. pigs by 1999.
- 1999: A pandemic planning framework is published by WHO emphasizing the need to enhance influenza surveillance, vaccine production and distribution, antiviral drugs, influenza research and emergency preparedness
- 1999: The neuraminidase inhibitors oseltamivir (Tamiflu®) and zanamivir (Relenza®) are licensed to treat influenza infection.

## 2000s

- April 2002: The Advisory Committee on Immunization Practices (ACIP) encourages that children 6 to 23 months of age be vaccinated annually against influenza.
- 2003: Public health officials are concerned about a re-emergence of H5N1 avian influenza reported in China and Vietnam.
- June 2003: The first nasal spray flu vaccine is licensed.
- 2004: The National Incident Management System (NIMS) is established to coordinate response for public health incidents that require actions by all levels of government, as well as public, private, and nongovernmental organizations.
- 2005: The US. Government National Strategy for Pandemic Influenza is published
- 2005: The entire genome of the 1918 H1N1 pandemic influenza virus [is sequenced](#)
- 2006: CDC stops recommending adamantanes during the 2005-2006 season after high levels of resistance among influenza A viruses. In the US, resistance increased from 1.9% during the 2003-2004 season to 11% in the 2004-2005 season.
- 2006: The National Strategy for Pandemic Influenza Implementation Plan is published. The document outlines U.S. preparedness and response to prevent the spread of a pandemic.
- 2007: The American Veterinary Medical Association (AVMA) establishes the One Health initiative Task Force, an effort to attain optimal health for people, animals, and the environment.
- 2007: The American Medical Association unanimously approves a resolution calling for increased collaboration between human and veterinary medical communities. The term 'one health,' which looks at the interactions between animal and human health, enters the medical and scientific lexicon.
- 2007: The One Health approach is recommended for pandemic preparedness during the International Ministerial Conference on Avian and Pandemic Influenza
- 2007: FDA approves the first U.S. vaccine for people against an avian influenza A(H5N1) virus.
- 2007: Human infection with a novel influenza virus is added to the nationally notifiable disease list
- 2008: ACIP expands its influenza vaccination recommendation to include vaccination of children ages 5-18 years.
- 2008: HHS Pandemic Influenza Operational Plan is published
- 2008: CDC receives US Food and Drug Administration approval for a highly sensitive influenza polymerase chain reaction (PCR) assay. These tests can detect influenza with high specificity that enhances diagnosis and treatment options.
- 2008: The Influenza Reagent Resource (IRR) is established by CDC to provide registered users with reagents, tools, and information to study and detect influenza viruses
- April 17, 2009: A new H1N1 virus is detected in the U.S.
- CDC begins working to develop a virus (called a candidate vaccine virus) that could be used to make vaccine to protect against this new virus.
- April 25, 2009: The World Health Organization (WHO) declares a public health emergency of international concern.
- June 11, 2009: WHO officially declares the new 2009 H1N1 outbreak a pandemic.
- 2009: CDC begins a [complex and multi-faceted response to the H1N1 pandemic](#) which lasts more than a year.
- 2009: Physicians use point of care rapid immunoassay tests to provide influenza results within 15 minutes during the H1N1 pandemic
- October 5, 2009: The first doses of monovalent H1N1 pandemic vaccine are administered.



## 2010s

- August 10, 2010: WHO declares an end to 2009 H1N1 influenza pandemic.
- 2010: The ACIP recommends annual influenza vaccination for those 6 months of age and older.
- 2012: Vaccines containing cell-cultured virus become available. Even though eggs continue to be the primary means of production, cell culture emerges as an alternative method for producing influenza vaccines.
- 2012: WHO makes first vaccine composition recommendation for a quadrivalent vaccine.
- 2012: CDC partners with Association of Public Health laboratories to define the optimal right size for influenza virologic surveillance. The project produces right-size calculators; statistical tools that help states determine the optimal amount of influenza testing needed for desired confidence levels of surveillance.
- 2014: The FDA approves peramivir (Rapivab) to treat influenza in adults. It is the first IV flu medication.
- 2017: CDC updates guidelines for use of non-pharmaceutical measures to help prevent spread of pandemic influenza based on latest scientific evidence. These are actions that individuals and communities can take to help slow spread of the flu like staying home when sick, covering a cough or sneeze, and frequently washing hands.